

Epidemiology and Risk Factors for Colorectal Polyps: A Moroccan Retrospective Study

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Abstract:- Colorectal polyps are the main precursor lesions of colorectal cancer (CRC). Detecting polyps is essential to reduce the incidence of CRC and the consequent morbi mortality.

In the current study, we aim to determine the prevalence and risk factors for colorectal polyps detected during colonoscopy.

Methods: This retrospective, descriptive and single-center study of 1518 cases was conducted in military hospital of instruction Mohamed V of Rabat- Morocco over a period from January 2018 to August 2021

Results: The study included 1518 subjects. Among them, 356 (23,5%) had colorectal polyps. The mean age was 60.5 +/- 12.68 years (age range: 19 - 92 years). The sex ratio (M/F) was 1.87 and 65.2% were male.

Patients with colorectal polyps in particular tend to be older, men, with a history of colorectal polyps, and a family history of colorectal cancer.

In multivariate analysis, age (OR: 0,9, 95%CI: [-0,04- -0,01], p<0,001) history of polyps (OR: 9,21; 95%IC: [1,09-3,56] ; p<0,001) , family history of CRC (OR: 2,27, 95%CI: [-0,34--0,47]; p=0,007), presence of a colorectal process (OR: 0,13; 95%CI: [-2,78- -1,25] ; p<0,001) and preparation (OR: 0,44; 95%CI: [-1,34- -0,28] ; p=0,002) were significantly associated with the presence of colorectal polyps.

Conclusion: In our study, we diagnosed polyps in 23,5% of patients. The presence of colorectal polyps was statistically significantly associated with age, history of polyps and the presence of colorectal process.

Keywords:- colorectal polyps, risk factors, colorectal cancer.

I. INTRODUCTION

Colorectal cancer (CRC) is the third most frequent cancer in men and the second most in women; it represents 8% of all cancer deaths worldwide with approximately 1.4 million new cases per year [1,2]. The incidence of CRC is highest in Asia and Eastern Europe [1,3].

In Morocco, CRC is the third most prevalent cancer in men (7,9%) and the fourth in women (5,9%). [4]

From colorectal polyps, the majority of CRCs develop. Most adenomatous polyps can develop into colon carcinoma [5,6], and this process is very long and slow [7]. For this reason, screening for adenomas and CRC in asymptomatic

subjects aged 50 years [8] is important to reduce the incidence and mortality rate of CRC [8,9].

Data available in the national literature concerning the evaluation of colorectal polyps are limited. Understanding the prevalence of colorectal polyps in the general population makes it important to screening for CRC. The objective of our study is to determine the prevalence of colorectal polyps in Moroccan patients during colonoscopy and identify factors associated to its presence.

II. METHODS

A. Study population

This retrospective descriptive and single center study of 1518 cases who underwent colonoscopy between January 2018 and August 2021 in the gastroenterology II department of the Mohamed V military training hospital, Rabat, Morocco.

Exclusion criteria were: History of inflammatory bowel disease and incomplete colonoscopy or incomplete clinical information.

B. Data collection:

We extracted all the data of medical records of medical center. Age, gender, indications, medical histories involving colorectal cancer, colectomy and inflammatory bowel disease were collected by a physician. While endoscopic finding, quality of preparation and presence of polyps were extracted from colonoscopy reports.

Bowel preparation quality was defined using the Boston bowel preparation scale.

C. Statistical analysis:

The statistical analyses were conducted using JAMOVI Version 1.6.8.0. Quantitative or continuous variables with normal distribution were expressed in mean +/- standard deviation and were compared by Student's t-test. Qualitative or categorical variables were expressed as frequencies with percentages and were analysed by Chi-squared (χ^2) test. To investigate the factors associated with the presence of colorectal polyps, we performed logistic regression with adjustment for potential confounders to calculate odds ratios (ORs) and 95% confidence intervals (CIs). A difference is considered statistically significant only when the $p \leq 0.05$.

III. RESULTS

The study included 1518 subjects. Among them, 356 (23,5%) had colorectal polyps (Table 1). The mean age was 60.5 +/- 12.68 years (age range: 19 - 92 years). The sex ratio (M/F) was 1.87 and 65.2% were male.

57 patients had a history of polyp (16.1%), 48 had a history of colorectal cancer (13.6%), and 7 patients had a family history of colorectal cancer (2%).

The subjects with colorectal polyps tend to be older, male, with a personal history of colorectal polyps and family history of colorectal cancer.

The most frequent indications for colonoscopy were rectorrhagia (28,1%), constipation (26%) and diarrhea (23,9%).

The quality of bowel preparation was good to fair 82,5% vs 17,5% with poor preparation.

Logistic regression analysis was used to determine the factors associated with presence of colorectal polyps (Table 2). In a multivariate analysis following adjustment of the study parameters, namely, age, sexe, history of colorectal polyps, family history of CRC, the presence of anemia, diarrhea, good preparation and presence of colorectal process, only age (OR: 0,9, 95%CI: [-0,04- -0,01], p<0,001) history of polyps (OR: 9,21; 95%CI: [1,09-3,56]; p<0,001), family history of CRC (OR: 2,27, 95%CI: [-0,34--0,47]; p=0,007), presence of a colorectal process (OR: 0,13; 95%CI: [-2,78- -1,25]; p<0,001) and preparation (OR: 0,44; 95%CI: [-1,34- -0,28]; p=0,002) were significantly predicted for the presence of colorectal polyps.

Variables	With colorectal polyp (n= 356)	Without colorectal polyp (n=1154)	p
Age (years) *	60,5+/-12,7	53,2 +/- 16,2	<0,001
Gender °			
Male	231(65,1)	557(48,2)	
Female	124(34,9)	603(51,8)	<0,001
History °			
Colorectal polyps	57(16,6)	29(2,6)	
Colorectal cancer	48(14)	80(7,2)	<0,001
Family colorectal cancer	7(2)	17(1,5)	
Indication °			
Rectorrhagia	86(26,2)	315(28,8)	0,359
Diarrhea	53(16,2)	289(26,5)	<0,001
Constipation	76(23,2)	293(26,8)	0,185
Irondeficiencyanemia	45(13,8)	219(20,1)	0,01
Melena	5(1,5)	31(2,8)	0,184
Preparation quality °			
Good	108(41,1)	212(25,5)	
Fair	109(41,4)	322(38,7)	<0,001
Poor	46(17,5)	298(35,8)	

Table 1: Subjects and clinical characteristics.

* : mean+/-SD

° : n (%)

Variables	Univariate			Multivariate		
	OR	CI95%	P value	OR	CI95%	P value
Age	1,02	[0,01-0,04]	<0,001	0,9	[-0,04- -0,01]	<0,001
Sexe	0,72	[-0,64- -0,009]	0,043	0,72	[-0,77- -0,13]	0,167
History of colorectal polyps	9,21	[1,36-3,08]	<0,001	9,21	[1,09-3,56]	<0,001
Familyhistory of CRC	2,27	[0,26-1,37]	0,004	2,27	[-0,34--0,47]	0,007
Anemia	3,04	[0,19-0,88]	0,002	0,81	[-0,68- -0,27]	0,406
Diarrhea	0,47	[-1,13- -0,34]	<0,001	0,66	[-0,94- -0,12]	0,13
Preparation	2,12	[0,37-1,12]	<0,001	0,44	[-1,34- -0,28]	0,002
Colorectal process	0,22	[-2,02- -0,98]	<0,001	0,13	[-2,78- -1,25]	<0,001

Table 2: Predictive factors for the presence of colorectal polyps after logistic regression analysis

IV. DISCUSSION

In this study, the prevalence of colorectal polyps was 23.5%. Age, personal history of polyps, family history of CRC, good preparation and presence of colorectal process were associated with the presence of colorectal polyps.

The prevalence of colorectal polyps has increased in the past years, which can be explained by changes in diet and lifestyle. Furthermore, the improvement of colonoscopy equipment and techniques has improved the detection rate. [11]

The incidence of colorectal polyps and CRC varies in different geographical region, being higher in Western countries and lower in Africa and South Asia. [12]

In this study, the prevalence was similar to Iranian [13], Arab, and Malisian studies where the rates were 23.5% and 20% respectively [14,15].

It was lower when compared to most Western countries. In an Italian multicenter study, the prevalence of colorectal polyps was 35% [16]. A series from Spain reported a polyp rate of 45.8% [17]. Other Mayo clinic studies in the United States and France reported a rate of polyps of 49% and 35.5% respectively [18,19]. While in African countries such as Nigeria and South Africa, these rates were lower than our results (16.1% and 17.3%) [20,21], as well as in China and Taiwan (18.1% and 11.1%) [22,23]

The prevalence of colorectal polyps and CRC generally rises with age [24], as shown by a number of studies that conclude the presence of polyps in 15% of patients aged 50-59 years and in a third of those aged over 65 years [25,26]. These results are in accordance with our study.

The risk of developing polyps and CRC is generally higher in men compared to women [27,28]. Our study confirmed significantly higher rates of polyps in men, which is consistent with current data indicating that male gender is a risk factor for polyps and CRC [27,29,30]. In addition, other studies support the gender difference in the prevalence of polyps, such as in Iran and China [13,22].

Several studies have shown that a family history of colorectal cancer is a risk factor for colorectal polyps [31,32], including one conducted in Mexico by Gonzalez et al involving 946 patients [33]. These results are identical to those demonstrated by our study.

Regarding the indications for colonoscopy, none of the digestive symptoms were predictive of polyps, as confirmed by other studies [34], whereas iron deficiency anemia was predictive of CRC [35]

Several studies have evaluated the effect of bowel preparation on the detection rate of polyps [36,37,38,39]. For example, in a retrospective study of 93,000 colonoscopies recorded in the Clinical Outcome Research Initiative, this rate was higher when preparation was adequate. This was supported in another study of 5832 patients, which showed

that the detection of neoplasms, including polyps of any size, was associated with the quality of bowel preparation [39], as shown in our study.

Some factors described in several studies as significantly associated with the presence of colorectal polyps such as smoking and BMI, were not cited in ours. This is due to incomplete data.

Some limitations of this study include its inherent retrospective design and incomplete characterization of polyp histology. Also, our sample included primarily symptomatic patients, so estimations can differ from screening studies involving asymptomatic individuals.

V. CONCLUSION

The prevalence of colorectal polyps was 23.5% in Morocco. Age, personal history of polyps, family history of CRC, good preparation and presence of colorectal process were associated with the presence of colorectal polyps. As precursor lesions to colorectal cancer, we should be careful to the risk factors of colorectal polyps in order to prevent and control this disease series.

Also, data presented here may provide a good infrastructure for the next preventive programs and have clinical implications for colorectal cancer screening through population-level programs. Screening-based studies, however, are required to probe the clinical and epidemiological aspects of colorectal polyps and cancer in Morocco.

In addition, the data presented in this study can provide programs for colorectal cancer detection. It is therefore necessary to perform screening studies to determine clinical and epidemiological aspects of polyps and colorectal cancer in Morocco.

• Ethical considerations:

Ethics committee approval was not required given the observational nature of the study and the use of anonymous clinical data for analysis.

• Role of the funding source

There was no funding source for this study. The corresponding author had full access to all the data in the study and had final responsibility for the decision to submit for publication.

• Ethical approval:

We declare that our work respects the ethical principles of medical publications.

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